

JAPAN

EDICT OF GOVERNMENT

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JIS B 6605 (1983) (English): Safety standards for construction of table band resaws

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*The citizens of a nation must
honor the laws of the land.*

Fukuzawa Yukichi

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UDC 621.935 : 62-78

JAPANESE INDUSTRIAL STANDARD

**Safety Standards for Construction
of Table Band Resaws**

JIS B 6605—1983

Translated and Published

by

Japanese Standards Association

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standard in Japanese is to be evidence

JAPANESE INDUSTRIAL STANDARD

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Safety Standards for Construction of
Table Band Resaws

B 6605-1983

1. Scope

This Japanese Industrial Standard specifies the construction for safety, safety devices, instruction manuals, inspection data sheet and marking on table band resaws⁽¹⁾, hereinafter referred to as the "band resaws".

Note (¹) Refer to JIS B 0114.

2. Definitions

For the purposes of this Standard, the following definitions apply.

- (1) driving saw wheel Of the two saw wheels composing a band resaw, the one saw wheel which is driven by an electric motor.
- (2) cutting side Of the two straight parts of a saw blade strained by the two saw wheels composing a band resaw, the one side which cuts the workpieces.
- (3) suppressing device A device which suppresses the transverse vibration of saw blades. This is composed of suppressing bars, suppressing bar holders, suppressing arms and others.
- (4) tensile force A tensile force exerted by the two saw wheels composing a band resaw.
- (5) concave space The space between the frame holding the top saw wheel and the straight part on the cutting side of a saw blade.

3. Construction for Safety

3.1 Starting Switch The starting switch (this means the switch for opening and closing the power supply circuit.) shall be as follows:

- (1) The starting switch shall be located where the operator can operate it without leaving his working position.

In addition, as far as the starting of the body of band resaws is concerned, the switch shall be located where the operator can operate to check the state of the saw blades and to adjust them, irrespective of his working position.

Applicable Standards:

JIS B 0114-Glossary of Terms for Wood Working Machinery
JIS G 4051-Carbon Steels for Machine Structural Use
JIS G 5501-Gray Iron Castings

Reference Standards:

JIS B 6507-General Code of Safety for Wood Working Machinery
JIS B 6509-Test Code for Performance and Accuracy of Band Saw
Machines and Feed Carriages

- (2) The starting switch shall be easy to operate, and there shall be no possibility of starting action suddenly due to contact, vibration and others.

3.2 Restart Preventing Device The band resaw shall be provided with a device which automatically keeps the power supply circuit in open condition at the time of the interruption of the electricity supply service or in the case where the electric source circuit for driving is opened, and which automatically prevents the body of the band resaw and the other devices from restarting after the restoration of the electricity supply service or in the case where the electric source circuit for driving is closed.

3.3 Saw Wheels The saw wheels shall be as follows:

- (1) The saw wheels shall have sufficient strength against the force exerted by saw blades such as tensile force, centrifugal force, and braking force.
- (2) The materials of the driving saw wheel shall be FC 20 of JIS G 5501 or those having equivalent or superior mechanical properties.
- (3) The materials of the saw wheel shafts shall be S 45 C of JIS G 4051 or those having equivalent or superior mechanical properties.

3.4 Device for Braking Driving Saw Wheel The device for braking the driving saw wheel shall be as follows:

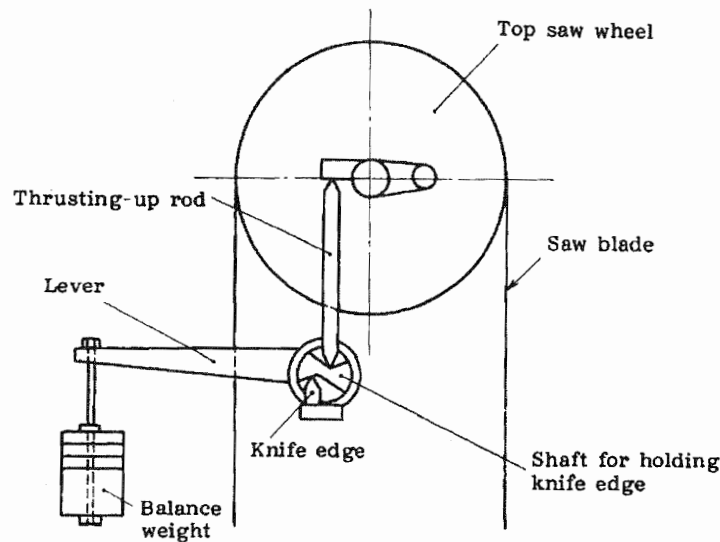
- (1) The driving saw wheel shall be provided with the braking device which is capable of braking the motion of the wheel effectively.
- (2) The braking device shall be so constructed that it can easily be operated and can be adjusted so as to function effectively.
- (3) The braking device operated by hand or foot shall conform to the following items:
 - (a) The operating direction shall be towards the non-cutting side.
 - (b) In order to prevent the operator from stumbling, falling down and the like, handles shall be provided.
 - (c) The foot pedal shall be provided with a nonslip surface, and with the stopper which prevents the pedal from descending down lower than the horizontal level.

3.5 Saw Blade Straining Device The saw blade straining device shall be as follows (see Fig. 1):

- (1) The mechanism of the device shall be such that saw blade always maintains reasonable tensile force corresponding to saw blade width and thickness, cutting conditions and others, and works with suitable sensibility.

- (2) In order always to maintain the tensile force described in (1), it is desirable that the band resaw should be provided with such a mechanism that, in case where the saw blade is abnormally strained due to some reason, prevents the body of the band resaw from starting, and in case of running, sounds an alarm, or cuts off its power supply circuit and actuates the braking device automatically.
- (3) The materials of the thrusting-up rod, the shaft for holding the knife edges and the knife edges of lever type saw blade straining devices shall be S 45 C of JIS G 4051 or those having equivalent or superior mechanical properties, and hardening treatment shall be given to the portions required to enhance abrasion resistance.
- (4) It is desirable that the band resaws should be provided with a straining device which has a function of preventing any abnormal running behavior such as dislocation of the saw blade out of the saw wheel or with a mechanism which detects such behavior and sounds an alarm, or a system which immediately cuts off the power circuit and automatically actuates a braking device, or a similar mechanism.

Fig. 1. Saw Blade Straining Device



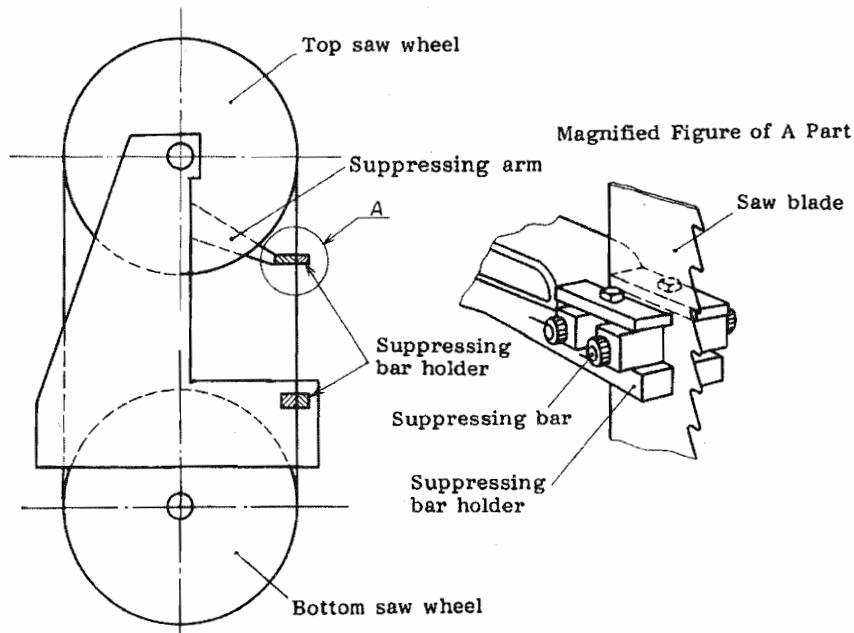
Remark: Figure gives an example, and does not specify the construction.

3.6 Device for Inclining Top Saw Wheel The device for inclining the top saw wheel shall be so mechanized that the inclination of the saw wheel in its running does not vary even when any force is suddenly applied to the operating handle.

3.7 Suppressing Device The suppressing device shall be as follows (see Fig. 2):

- (1) The suppressing bars shall be such that their fixed positions can easily be adjusted according to saw blade widths.
- (2) The suppressing arm shall be so mechanized that its ascending and descending operations can be done at the position where there is no danger of contacting with the sawteeth.
- (3) The upper suppressing bar holder shall be capable of descending down to the position where the clearance between its lower end and the workpiece becomes the smallest.

Fig. 2. Suppressing Device



Remark: Figure gives an example, and does not specify the construction.

3.8 Device for Eliminating Extraneous Matter from Saw Wheel and Saw Blade The band resaws shall be equipped with the clearing plates which eliminate saw dusts, resin and the like adhering to the saw wheel and saw blade, and a device for eliminating other matters coming from the oiling device and the like.

Furthermore, the extraneous matter eliminating device shall have no possibility of inflicting any damage on the saw wheel and saw blade.

3.9 Device for Preventing Chips and Others from Being Caught in Bottom Saw Wheel A device for prevention shall be provided at a place where chips, barks and others are liable to be caught between the bottom saw wheel and the saw blade.

Furthermore, the part of the preventing device adjacent to the saw blade shall be made of materials which are not liable to inflict damage on the saw blade, and shall be highly interchangeable.

3.10 Ruler The rulers shall be so constructed that they can be fixed securely and can be operated and adjusted with ease.

4. Safety Devices

4.1 Sawteeth Cover The sawteeth cover shall be so constructed that it can cover the sawteeth excluding the saw blade part necessary for cutting the workpiece.

Furthermore, the sawteeth cover on the side cutting the workpiece, hereinafter referred to as the "contact preventing device", shall be as follows:

- (1) The material shall be the steel plate 1 mm or over in thickness or that having the equivalent or superior strength.
- (2) The contact preventing device shall be an integrated construction with the suppressing bar holder, and its ascending and descending operations shall be conducted mechanically.
- (3) The contact preventing device shall cover 3 faces except the concave space side, and the front side shall be so constructed as to be opened and closed.
- (4) The contact preventing device shall be so constructed that the sawteeth do not protrude into the space between its upper end and the lower end of the top saw wheel cover, even when the suppressing bar holder is lowered down to the lowest limit position.
- (5) The device shall be so constructed that the front view is not obstructed excessively.

4.2 Saw Wheel Cover The saw wheel cover shall be as follows:

- (1) The materials shall be the steel plate 1 mm or over in thickness or those having equivalent or superior strength.
- (2) The cover shall cover the upper face and the front, rear, left and right faces of the saw wheel.

Furthermore, the top saw wheel cover, even when the saw wheel is lowered down to the lowest limit position, shall still cover the lower end of the saw wheel.

- (3) The materials of the lower saw wheel cover which also covers the pit shall be the steel plate 3 mm or over in thickness, or those having the equivalent or superior strength.
- (4) The top saw wheel cover shall be internally lined with any effective shock absorbing material for preventing the saw blade and its fragments from flying out due to breakage of the saw blade.
- (5) The interval between the upper end of the top saw wheel at its highest position and the surface of the internal lining of the cover shall be 100 mm or over.
- (6) The top saw wheel cover shall be equipped at an appropriate place of the inner face on the sawteeth side, with the holder for receiving the saw blade dislocated out of the saw wheel.
- (7) On the top saw wheel cover, a peephole for checking the relative position of the saw wheel and the saw blade may be provided. In this case, however, its opening shall be of sufficiently robust construction.

5. Instruction Manual

The band resaw shall be furnished with an instruction manual, in which the matters necessary for securing safety such as the type, specifications, construction, saw blades to be used, operations, maintenance, inspection, adjustment, installation and others shall be enumerated.

6. Inspection Data Sheet

The band resaw shall be provided with inspection data sheets (inspected items and their results) relating to safety.

7. Marking

The band resaw shall be marked with the following information in a conspicuous place by an indelible way.

- (1) Manufacturer's name
- (2) Year and month of manufacture and serial number
- (3) Type
- (4) Rated output or rated current
- (5) Rated voltage
- (6) No-load speed of rotation

- (7) Magnification of tension
- (8) Mass of standard metal weights and standard oil pressure (the mass of standard metal weights and standard oil pressure imparting an adequate tensile force to the saw blade according to saw width, saw thickness and others)
- (9) Other matters which are particularly required for safety.

B 6605-1983
Edition 1

Japanese Text

Established by Minister of International Trade and Industry

Date of Establishment: 1983-08-01

Date of Public Notice in Official Gazette: 1983-08-04

Investigated by: Japanese Industrial Standards Committee

Divisional Council on Machine Tool

Technical Committee on Woodworking Machines

This English translation is published by:
Japanese Standards Association
1-24, Akasaka 4, Minato-ku,
Tokyo 107 Japan

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Printed in Tokyo by
Hohbunsha Co., Ltd.